

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CLAUDIO BATTOCCHIO and ANDRE DOSJOUB

Appeal No. 1997-2883
Application 08/379,443

HEARD: FEBRUARY 9, 2000

Before JERRY SMITH, DIXON, and FRAHM, Administrative Patent Judges.

FRAHM, Administrative Patent Judge.

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's final rejection of claims 23 and 25 to 52, which constitute all of the claims pending on appeal. Claims 1 to 22 and 24 have been canceled.¹

¹ We note that although the examiner includes claim 24 in the Answer (page 4) and in the final rejection (pages 1 and 6) as being included with the other rejected claims, 23 and 25 to 52, claim 24 was canceled by appellants at page 9 of their August 16, 1996, amendment. Although the amendment of August 16, 1996, was made after final rejection, this amendment was entered by the examiner. Such entry is evidenced by the Advisory Action of

BACKGROUND

The subject matter on appeal is directed to run flat tire actuation sensors for vehicles, and particularly to a process for detecting when a tire has gone flat by sensing a resonance mode in the vehicle acceleration of a tire support. When a vehicle acceleration sensor detects the presence of a resonance mode in vehicle acceleration of the tire support it is determined that the run flat tire has been activated (i.e., that the vehicle is then supported on a safety or security bearing which resides inside the tire).

As indicated by appellants (see specification, page 2; Brief, page 3), it was conventional in the prior art that a resonance mode between 10 and 20 Hz be detected in order to determine whether or not support of a vehicle on a security bearing had taken place (i.e., the run flat tire had been actuated). Appellants have recognized that interference occurs with respect to detection of resonance modes lower than 100 Hz, and in particular between 10 and 20 Hz. This is brought out in appellants' discussion of the Jones reference as admitted prior art in appellants' specification (page 2). Specifically, prior art detection devices such as Jones which detect resonance modes at frequencies between 10 and 20 Hz do not properly and accurately detect actuation of safety bearings in tires, since an actuation detection may be due to other causes such as tire overload or road noise (specification, pages 2 to 3).

September 4, 1996 (which stated that the amendment would be entered upon the filing of an appeal), and by the notation, "OK to Enter, 9-2-96" and the examiner's initials appearing on the amendment itself.

To overcome the difficulties of conventional run flat tire actuation sensors such as that of Jones, appellants detect a resonance mode characteristic of a flat tire which "is in a frequency band exceeding 100 Hz" (see representative claim 23 on appeal). This overcomes the problem in the prior art of making a run flat actuation determination when tire overloading, road noise, or some other diverse source triggers a 10 to 20 Hz resonance mode.

As further discussed, infra, we find that the applied prior art of Jones in view of Karbo fails to teach or suggest at least the salient feature of detecting a resonance mode which occurs at a frequency over 100 Hz as defined in the claims on appeal.

Representative independent claim 23 is reproduced below:

23. Process for detection of the actuation of a support of at least one of the tires of a vehicle on a security bearing, which comprises detecting the appearance of at least one resonance mode of at least one component involved in the suspension of the passenger compartment of the vehicle, wherein said resonance mode is a characteristic of rolling travel of said tire supported on said safety bearing, said characteristic resonance mode detected being of an order greater than a first resonance mode and wherein the characteristic resonance mode detected is in a frequency band exceeding 100 Hz.

Claims 23 and 25 to 52 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Jones in view of Karbo.

Rather than repeat the positions of appellants and the examiner, reference is made to the Briefs and the Answers for the respective details thereof.

OPINION

It is our view that the prior art relied upon and the level of skill in the particular art would not

have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 23 and 25 to 52. We also find that any conclusion of obviousness of the invention recited in the claims on appeal would necessarily have involved the improper use of hindsight.

In reaching our conclusion on the issues raised in this appeal, we have carefully considered appellants' specification and claims, the applied prior art, and the respective viewpoints of appellants and the examiner. As a consequence of our review, we are in general agreement with appellants (Brief, pages 17 to 23) that the claims on appeal would not have been obvious to one of ordinary skill in the art at the time the invention was made in light of the teachings of Jones and Karbo. For the reasons which follow, we will not sustain the decision of the examiner rejecting claims 23 and 25 to 52 under 35 U.S.C. § 103.

At the outset, we note that it must be recognized that any judgement on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See In re McLaughlin, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971).

Appellants argue (Brief, page 20) that Jones and Karbo, whether taken singly or in combination, fail to teach or suggest the detection process of representative claim 23 on appeal of

detecting the appearance of a resonance mode having an order greater than a first resonance mode which occurs in a frequency band exceeding 100 Hz. We agree. We also agree with appellants that "it would not be obvious to choose to follow the evolution of the resonance mode of the wheels or the wheel-carriers" in order to achieve appellants' invention of representative claim 23. We can find no reasonable teaching or suggestion in the applied references that one would look past even 50 Hz to detect run flat actuation.

Nothing in Jones or Karbo suggests a detection process which detects a resonance mode in excess of 100 Hz. Jones only teaches sensing a resonance mode in the 10 to 20 Hz range as shown in Figure 2, and does not say anything with respect to frequencies over 80 Hz. Karbo fails to mention any frequency range, since one is not needed, because Karbo uses a switch type device in the security bearing to detect actuation of the run flat tire (see Karbo, Figures 2 and 3). Thus, we cannot agree with the examiner that the ordinarily skilled artisan looking at Jones or Karbo would have been led to "try all typical and practical frequency bands" (Answer, page 7), when Jones specifically teaches looking for a resonance mode only at 10 to 20 Hz (see Jones, Figure 2 and column 2, line 58 to column 3, line 4) and Karbo does not appear to discuss resonant frequency at all. Accordingly, we find that it would not have been obvious to the ordinary artisan to detect a resonance mode in a frequency range exceeding 100 Hz as required by representative claim 23 on appeal.

The examiner admits that detection of a resonance mode at a frequency exceeding 100 Hz is

not taught explicitly in Jones (Answer, page 5), and that "no teaching nor suggestion was found in the reference to motivate the setting of the appropriate thresholds" such as a frequency band exceeding 100 Hz (Answer, page 4). We are not persuaded by the examiner's reasoning that because "[i]t may or may not happen that the range includes a resonance mode of an order greater than the first resonance mode" (Answer, page 5), "the skilled artisan, without undue experimentation, would try all typical and practical frequency bands until he found the one which yields the best results" (Answer, page 7).

The only direction to analyze a resonant mode which occurs at a frequency exceeding 100 Hz in order to avoid flat tire detection being affected by diverse sources (instead of analyzing the resonant mode at 10 to 20 Hz as is conventional) is found in appellants' own disclosure. Only appellants have recognized the difficulty of singling out a run flat actuation from other road noise, diverse sources, or tire overloading. Neither Jones nor Karbo is directed to solving the problem appellants have recognized of isolating run flat actuations from other types of vehicle operation difficulties in order to more accurately notify a vehicle operator of a run flat actuation. Indeed, both Jones and Karbo detect all abnormal conditions which include flat tires, overloaded tires, and run flat actuations (see Jones, column 2, line 58 to column 3, line 9; and Karbo, column 4, lines 52 to 57 and column 6, lines 42 to 45).

We agree with appellants (Reply Brief, pages 2 to 3) that the examiner has employed hindsight

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in formulating the § 103 rejection of the claims on appeal, and we find that to modify the vertical acceleration sensor of Jones in view of Karbo in order to achieve appellants' claimed invention would have required the use of impermissible hindsight. Accordingly, we cannot sustain the examiner's decision rejecting claims 23 and 25 to 52 under 35 U.S.C. § 103 over Jones in view of Karbo.

In light of the foregoing, the differences between the subject matter recited in the claims and the applied prior art are such that the claimed subject matter as a whole would not have been obvious within the meaning of 35 U.S.C. § 103. Accordingly, we shall reverse the standing rejection of claims 23 and 25 to 52 on appeal.

REVERSED

JERRY SMITH)	
Administrative Patent Judge)	
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ERIC FRAHM)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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JOSEPH L. DIXON)	

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